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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,542	12/03/2003	Greg L. Cannon	1823.0820006	3187
26111 7590 01/09/2008 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				
			EXAMINER MARIAM, DANIEL G	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 01/09/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/725,542

Applicant(s)

CANNON ET AL.

Examiner

DANIEL G. MARIAM

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-79-12, 14-21, 23-24, 26-26-28, 30, 32, 34, 38, and 40-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 43-47 is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☒ Claim(s) 29 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

Response to Arguments

1. Applicant's arguments with respect to claims 1-3, 5-7, 9-12, 14-21, 23-24, 26-28, 30, 32, 34, 38, and 40-41 have been considered but are moot in view of the new ground(s) of rejection.

Examiner's Note

2. Examiner has cited particular columns and line numbers or figures in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5, 7, 9-12, 14-21, 23-24, 32, 34, 38, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Rachlin (4,925,300).

With regard to claim 1, a system for processing image data representing biometric, i.e., fingerprint, data (See for example, Figs. 1-2), the system comprising: a receiving module for receiving image data captured in a first polar coordinate system (See for example, computer (17), in Fig. 2); and a coordinate conversion module (this feature is considered inherent

within the computer (17))coupled to the receiving module for converting the image data captured in the first, polar coordinate system to converted image data in a second coordinate system, i.e., Cartesian (See for example, col. 4, lines 42-51).

With regard to claim 2, the system of claim 1 further comprising a memory, i.e., storage, coupled to the coordinate conversion module (See for example, Fig. 2).

With regard to claim 3, the system of claim 1 wherein the second coordinate system is a rectangular, i.e., Cartesian, coordinate system (col. 4, lines 50-51).

With regard to claim 5, the system of claim 1 further comprising a scanning and capturing system coupled to the receiving module wherein the scanning and capturing system (See for example, Figs. 1-2) comprises: a substantially conical non planar prism (See for example, item 3, in Fig. 1), and a scanning imaging system optically coupled to the substantially conical non- planar-prism for capturing image data in a first polar coordinate system and for communicating the image data to the receiving module (See for example, col. 3, line 65 – col. 4, line 51).

With regard to claim 7, the system of claim 5 wherein the second coordinate system is a rectangular, i.e., Cartesian, coordinate system (See for example, col. 4, lines 50-51).

With regard to claim 9, claim 5 encompasses the limitation of this claim, and is rejected the same as claim 5. Thus, argument analogous to that presented above for claim 5 is not repeated herein, but is entirely incorporated herein by reference.

Claim 10 is rejected the same as claim 5. Thus, argument analogous to that presented above for claim 5 is applicable to claim 10.

With regard to claim 11, the system of claim 10 wherein the image conversion system further comprises a memory, i.e., storage, coupled to the coordinate conversion module (See for example, Fig. 2).

With regard to claim 12, the system of claim 11 wherein the second coordinate system is a rectangular, i.e., Cartesian, coordinate system (col. 4, lines 50-51).

With regard to claim 14, the system of claim 11 wherein the substantially conical prism is a conical prism (See for example, item 3 in Fig. 1, and the associated text).

Claim 15 is rejected the same as claim 9. Thus, argument analogous to that presented above for claim 9 is applicable to claim 15. Claim 15 distinguishes from claim 9 only in that it recites a biometric imaging system, which is also disclosed by Rachlin (See for example, Figs. 1 and 2).

With regard to claim 16 and 17, claim 10 encompasses the limitation of these claims, and are rejected the same as claim 10. Thus, argument analogous to that presented above for claim 10 is applicable to claims 16 and 17.

With regard to claim 18, the system of claim 15 wherein the second coordinate system is a rectangular, i.e., Cartesian, coordinate system (col. 4, lines 50-51).

With regard to claim 19, the system of claim 18 wherein the first coordinate system is a polar coordinate system (See for example, col. 4, lines 47-51).

With regard to claim 20, a system for processing image data representing biometric, i.e., fingerprint, data (See for example, Figs. 1 and 2), wherein the system comprises: a conversion module configured to convert for converting image data captured in a first polar coordinate

system to converted image data in a second coordinate, i.e., Cartesian, system (See for example, computer 17, in Fig. 2; and col. 3, line 65 – col. 4, line 51).

With regard to claim 21, the system of claim 20 wherein the second coordinate system is a rectangular, i.e., Cartesian, coordinate system (See for example, col. 4, lines 50-51).

Claim 23 is rejected the same as claim 2 except claim 23 is a method claim. Thus, argument similar to that presented above for claim 2 is applicable to claim 23.

Claim 24 is rejected the same as claim 3 except claim 24 is a method claim. Thus, argument similar to that presented above for claim 3 is applicable to claim 24.

With regard to claim 32, claim 11 encompasses the limitation of this claim except claim 32 is a method claim, and is rejected the same as claim 32. Thus, argument analogous to that presented above for claim 11 is applicable to claim 32.

Claim 34 is rejected the same as claim 12 except claim 34 is a method claim. Thus, argument similar to that presented above for claim 12 is applicable to claim 34.

Claim 38 is rejected the same as claim 20 except claim 38 is a method claim. Thus, argument similar to that presented above for claim 20 is applicable to claim 38.

Claim 40 is rejected the same as claim 21 except claim 40 is a method claim. Thus, argument similar to that presented above for claim 21 is applicable to claim 40.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 9, 15, 20, 23, 26-28, 30, 32, 38, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima, et al (6,094,499) in view of Rachlin (4,925,300).

With regard to claim 1, Nakajima discloses a system for processing image data representing biometric data, i.e., fingerprint data, (See for example, Fig. 2), the system comprising: a receiving module, i.e., item 165 or 166, in Fig. 16, for receiving image data captured in a first, (polar) coordinate system, i.e., Cartesian coordinate system (See for example, col. 18, lines 41-45); and a coordinate conversion module, i.e., item 167, in Fig. 16, coupled to the receiving module for converting the image data captured in the first, (polar) coordinate system to converted image data in a second coordinate system, i.e., polar coordinates system (See for example, col. 18, lines 46-59). Additionally, applicants' attention is invited to the overall system shown in Figure 2. Nakajima does not expressly call for receiving image data captured a first polar coordinate system. However, Rachlin (See for example, Fig. 2) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to employ the teaching as taught by Rachlin into the system of Nakajima, and to so would at least enhance the system by allowing the capturing of fingerprint data in polar coordinate form and converting the received polar data into Cartesian coordinate form.

With regard to claim 9, Nakajima, et al (hereinafter "Nakajima") further discloses all of the claimed subject matter as already discussed above for claim 1, and the arguments are not repeated herein, but are incorporated by reference. Nakajima also discloses a fingerprint sensor that embeds a generic prism (See for example, item 10-3 in Figure 2). Claim 9 distinguishes from claim 1 only in that it recites a substantially conical prism. However, Rachlin (See for

example, item 3, in Fig. 1) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the teaching as taught by Rachlin into the system so as to provide a conical prism, and to do so would at least enable the system of Nakajima obtain complete patterns and high quality imaging of the finger or palm print.

With regard to claim 15, claim 9 encompasses the limitation of this claim, and is rejected the same as claim 9. Thus, argument analogous to that presented above for claim 9 is applicable to claim 9. Claim 15 distinguishes from claim 10 only in that it recites the limitation “a system for processing image data representing biometric data, comprising a biometric, i.e., fingerprint, imaging system,” which is also disclosed in Nakajima (See for example, Fig. 2).

Claim 20 is rejected the same as claim 1. Thus, argument similar to that presented above for claim 1 is applicable to claim 20.

Claim 23 is rejected the same as claim 1 except claim 23 is a method claim. Thus, argument analogous to that presented above for claim 1 is applicable to claim 23.

With regard to claim 26, wherein the method further comprises generating and storing a conversion data array including coordinate and offset data (See for example, col. 17, lines 52-65 of Nakajima).

With regard to claim 27, the method of claim 23, further comprising: prior to receiving captured image data, receiving criteria, i.e., ID number, associated with specifications for processing the captured image data, and generating and storing at least conversion data array corresponding to the received criteria (See for example, col. 18, lines 26-59 of Nakajima).

With regard to claim 28, the method of claim 27 further comprising generating and storing at least one conversion parameter, i.e., amplitude or phase, corresponding to the received criteria (See for example, col. 18, lines 41-45 of Nakajima).

With regard to claim 30, the method of claim 27 wherein each of the at least one conversion data array is generated dynamically (See for example, col. 18, lines 26-65 of Nakajima).

With regard to claim 32, a method for processing image data representing biometric, i.e., fingerprint, data in a system having a scanning and capturing system (See for example, item 10, in Fig. 2 of Nakajima) and an image conversion system (See for example, item 20, in Fig. 2 of Nakajima), comprising: generating and storing conversion data in the image conversion system (See for example, item 20-5, in Fig. 2 of Nakajima); capturing in the scanning and capturing system the image data in a first, polar coordinate system, communicating the captured first, polar coordinate system image data to the image conversion system and converting the captured first, polar coordinate system image data to converted image data in a second coordinate system (the arguments presented above for claim 1 are not repeated herein but are incorporated by reference).

With regard to claim 38, claim 1 encompasses the limitation of this claim, and is rejected the same as claim 1. Thus, argument analogous to that presented above for claim 1 is applicable to claim 38.

Claim 41 is rejected the same as claim 26. Thus, argument analogous to that presented above for claim 26 is applicable to claim 41.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima in view of Rachlin as applied to claims 1, 9, 15, 20, 23, 26-28, 30, 32, 38, and 41 above, and further in view of Martinez, et al (6,483,932).

With regard to claim 6, Nakajima (as modified by Rachlin) discloses all of the claimed subject matter as already discussed above in paragraph 6, and incorporated herein by reference. While Nakajima (as modified by Rachlin) discloses the scanning and capturing system coupled to the receiving module via item 20-5 in Fig. 2 "Nakajima", he does not expressly call for wherein the scanning and capturing system is coupled to the receiving module via a data network. However, Martinez, et al (See col. 4, lines 47-62) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the teaching as taught by Martinez, et al into the system of Nakajima (as modified by Rachlin), so as to establish communication between the capturing system and the receiving module using a data network.

Allowable Subject Matter

8. Claims 43-47 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record disclose or fairly suggest performing a look up to obtain conversion data including the coordinate data and the offset data associated with respective pixel coordinates; retrieving at least one sample of stored captured image data; and interpolating each retrieved sample with weighting based on the looked up offset data to obtain a respective pixel value in the second coordinate system. It is for this reason and in combination with all of the other elements of the claims that claims 43-47 are allowable over the prior art of record.

9. Claim 29 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BRIAN P. WERNER can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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DANIEL G MARIAM
Primary Examiner
Art Unit 2624

January 6, 2008